

December 28, 2000

**Department of
Environmental
Protection**

59-17 junction Boulevard

Corona, New York

11369-5107

Ms. Jeanne Fox
Regional Administrator
United States Environmental Protection Agency
Region II
290 Broadway
New York, NY 10007-1866

**Joel A. Miele Sr., P.E.
Commissioner**

Dear Ms Fox:

I am writing to you to seek a modification of the Filtration Avoidance Determination (FAD) requirements relating to the facilities for New York City's Catskill/Delaware water supply. This letter will outline the justification for seeking such modification and the proposed changes and additions to the FAD design of filtration.

Under the FAD, the New York City Department of Environmental Protection (DEP) has been required to pursue its comprehensive watershed protection program and design of filtration facilities on parallel tracks. The premise behind the dual track approach was that, should the City's watershed protection efforts fall short, the City would not have lost time in planning for filtration. While the City recognized the reasons behind the dual track approach, DEP also believed that once the watershed protection program had been given a reasonable time to prove its effectiveness, the City should be relieved from the obligation of designing a filtration facility. Accordingly, condition 203c- I of the May 1997 FAD was drafted to give the City the opportunity to approach EPA prior to December 31, 2000, to seek relief from certain future design deliverables. In order to qualify for such relief, the City must demonstrate substantial compliance with the terms of the FAD and that it is providing adequate protection of the Catskill/Delaware water supply (See condition 203c- I of the May 1997 FAD). I believe that the City fully meets the criteria set forth in the FAD.

In this letter I will summarize the current excellent quality of the City's water; highlight some of the many significant achievements of the watershed protection program, including some advances made since EPA completed its Mid-course Review of the FAD; and detail the changes that DEP proposes to the filtration schedule, including the addition of feasibility studies and, if determined to be feasible, construction of an ultraviolet disinfection (UV) facility, a treatment option over and above what was contemplated by the FAD.

Water Quality

Any assessment of the City's watershed protection program must begin with a look at water quality. On this topic there can be no disagreement: Catskill and Delaware water continues to be of the highest quality, easily meeting all Surface Water Treatment Rule standards. Cobform levels, turbidity and total trihalomethanes are well within acceptable limits. Adequate disinfection concentrations are maintained throughout the distribution system. One example of the high quality of Catskill/Delaware water is the fact that since November 1994, DEP has collected approximately 64,000 in-City Compliance Samples and only 3 of those have tested positive for *E. coli*. All resamples were negative for *E. coli* bacteria.

DEP also has in place a monitoring program that will allow the City and EPA to be confident that changes in water quality can be detected. DEP conducts an intensive sampling effort within the distribution system, collecting more than 1,300 compliance and surveillance samples per month, well in excess of the 480 samples required by the Total Coliform Rule. A similarly intensive sampling effort takes place upstate, on waterbodies and in the watershed.

Watershed Protection

DEP has undertaken a watershed protection effort that is second to none. For more than a decade, the City has studied its watershed, identified potential threats to water quality and implemented protective and remedial programs to address those threats. In its comprehensive Mid-Course Review, issued in May 2000, EPA did an excellent job of cataloguing DEP's programs and enumerating the successes of the watershed protection effort. I would like to highlight just a few of those achievements, as well as inform you of some additional progress and commitments made since the Mid-course Review was published.

Kensico Reservoir

No single basin in the world has been studied more intensively than Kensico. DEP has mapped the watershed; sampled the streams and groundwater; located every inch of sewer and every septic system in the basin; counted and recounted the birds on the reservoir; and conducted literally dozens of other studies to identify every possible threat to water quality in the basin. Out of these studies has grown what is without a doubt the most comprehensive management plan for any single basin anywhere.

DEP targeted resources to address and correct identified threats:

- * Waterfowl Management - Bird controls have led to dramatic decreases in waterfowl populations on the Reservoir, with attendant decreases in conform loads. This may be the single most effective (and cost-effective) water quality program DEP has ever instituted;
- * KWIC - DEP provided technical support to this alliance of corporations on the Route 120 corridor. KWIC has completed a Route 120 Corridor Management Plan, now being implemented by the corporations. The plan targets stormwater runoff, pesticide use, waste management, waterfowl, use and storage of winter road deicing materials and other potential pollutants. DEP believes that the KWIC plan is a model for ensuring minimal impacts on water quality from existing commercial development ;

- * Stormwater - DEP is constructing 44 best management practices (BMPs), including 10 extended detention basins, to control stormwater runoff. Total construction cost for this effort is \$15 million. Due to the importance of this effort, DEP has accelerated construction of the BMPs. I am pleased to report that 4 out of the 44 BMPs are now complete and we expect full completion well in advance of the June 2002 deadline DEP projected in February 1997.
- * Sewers - DEP inspected 50,000 feet of sanitary sewer and repaired these sewers as necessary. Additional inspections are planned;
Septics - DEP has begun a second house-to-house survey of all septic systems in the basin;
- * Reservoir Dredging - DEP dredged intake channels in front of Catskill Upper Effluent Chamber and Shaft 18 and removed thousands of cubic yards of sediment at a cost of \$1.2 million;
- * Westchester Airport - DEP has coordinated closely with the County on activities at the airport to reduce or eliminate potential threats to the Reservoir. The airport has completed a diversion of some stormwater flows and initiated a groundwater study at DEP's request. DEP is monitoring the Airport's expansion plans to ensure protection of water quality.

Land Acquisition

The Land Acquisition Program has made tremendous progress in securing lands that will be held for watershed protection in perpetuity. It has been just under four years since DEP received a land acquisition permit from the State. In that time, the City has solicited more than 193,000 acres of watershed land and has 26,329 acres either acquired or under contract. The success of the land acquisition efforts in the West Branch basin are especially impressive. Of the approximately 25,000 acres in the West Branch/Boyd's Comer basins (excluding the lands under the reservoirs), the City has acquired or under contract more than 6,600 acres. Further, the City is in active negotiations with landowners for parcels that we believe will raise that total to approximately 9,000 acres. When added to the over 4,150 acres of land owned by the City prior to the acquisition program and State or other public land in the basin, DEP will have ensured that more than 50% of the entire basin area is forever protected from development.

Farm Program

DEP, in cooperation with the Watershed Agricultural Council, has helped make the Farm program into a national model. As you know from our regular reports, the Farm Program has a solid history of achievement: 319 farms have signed up to participate (versus a FAD goal of 297); 175 farms have commenced implementation of Whole Farm Plans; and \$9.5 million has been spent to date on structural BMPs. DEP and WAC are especially pleased by the recent addition of the Conservation Reserve Enhancement Program (CREP) to the tools available to farmers for watershed protection. In August 1998, the United States Department of Agriculture (USDA) and New York City entered into a five-year CREP Memorandum of Agreement, based on a proposal put forth by DEP. Under CREP, the federal government pays enhanced annual rental rates and other incentives to agricultural landowners to take environmentally sensitive lands out of production and pays half the cost of treating those lands with conservation practices. New York City pays the other half of the conservation practice costs. Conservation practices include tree and shrub plantings and fencing. To date, more

than fifty landowners have enrolled over 600 acres of riparian buffer lands into CREP, which - represents a dramatic increase, over traditional rates of enrollment in the Conservation Reserve Program in the watershed region. The goal of CREP is to enroll and treat 5000 acres, with emphasis on riparian buffer lands.

New Developments

Since EPA issued its Mid-course Review in May of this year, there have been a number of developments that I would like to share with you. I think these represent just a few examples of the ongoing success of the watershed protection effort and the City's willingness where necessary to go above and beyond the requirements of the FAD to ensure adequate watershed protection.

Action Plan

In response to the many thoughtful suggestions made by EPA in its Mid-course Review, DEP recently forwarded to Kathy Callahan a draft Action-Plan which lays out DEP's strategy for pursuing EPA's recommendations. Through its Action Plan, DEP has made a firm commitment to develop plans and strategies for assessing and -addressing the program areas highlighted by EPA- This effort is in addition to the many commitments in the current FAD and I believe demonstrates the City's unwavering commitment to continually evaluating and improving its watershed protection effort.

Specifically, the City will review and refine the programs below and provide written summaries to EPA by the date specified:

- * Prioritize acquisition of lands in Priority Areas 3 and 4 - Completed.
- * Develop a detailed strategy for addressing non-point pollution in the Catskill/Delaware basins east of Hudson - December 2002. In addition to this contracted effort, DEP will develop an in-house interim strategy by September 2001.
- * Develop plans to evaluate water quality benefits of the Stream Management Program May 2001.
- * Review and revise DEP's Wetlands Protection Strategy (including an assessment of EPA's suggestion to set a goal of increasing wetland acreage in the watershed) September 2001.
- * Develop a strategy for public outreach and education - May 2001.
- * Review and refine DEP's strategy for locating and remediating septic failures throughout the Catskill/Delaware watershed, including development of a septic operation and maintenance program - July 2001.
- * Revise Stormwater Pollution Prevention Plan (SPPP) guidance and conduct SPPP outreach and education sessions - Guidance revisions December 2000. Workshops to be conducted spring and summer 2001.
- * Develop a plan for using terrestrial and reservoir models to meet program objectives - September 2001.
- * Analyze the watershed water quality monitoring program to ensure DEP has the ability to detect trends and measure changes in water quality - DEP will include the results of this analysis and recommendations for changes to the monitoring program, if any, in its application for a continuation of the FAD in December 2001.

Kensico Land Acquisition

One program that EPA designated as very important is the acquisition of land in the Kensico basin. DEP and EPA have met several times to discuss this issue since the Mid-course Review was issued. Approximately 1,000 acres in the basin are eligible for solicitation. DEP has been working diligently to attempt to acquire parcels. At the time of the Mid-course Review, DEP had acquired two parcels, totaling about 17 acres. I am pleased to report that DEP has recently received a verbal acceptance of an offer for an additional 18-acre parcel in the Kensico basin. While the acquisitions to date do not represent a significant increase in the City's holdings, I believe they do underscore the good faith effort that the City is making to acquire as much land as possible in the basin. As EPA knows, DEP is in active discussions with other landowners in the basin and is optimistic about securing additional acreage.

WWTP Program Staffing

A second important area identified in the Mid-course Review is the progress of the wastewater treatment plant (WWTP) Upgrade Program. In response to EPA's concerns, DEP developed a multi-faceted Action Plan that identifies specific steps DEP and its Program partners will take to accelerate the progress of this effort. One of DEP's commitments was to add staffing to the Program. In addition to the consulting firms that will be on board shortly to help with the review of upgrade plans, DEP has just reallocated two full time staff people to the Program. We remain optimistic that the City will meet the targets set forth for the upgrade of West of Hudson facilities.

Other Programs

DEP has made two additional commitments that I would like to emphasize. First, DEP is seeking additional City funding for the Stream Management Program, in part to augment program implementation during the current FAD. A total of nearly \$5 million is being sought, over a period of four years, which will enable restoration of six miles of stream channel in five major sections of the Batavia Kill that are experiencing severe erosion and contributing to excessive loadings of suspended solids to the Schoharie Reservoir; create a "Demonstration Watershed" for natural stream channel stability restoration projects; enable restoration of Red Falls; and allow continued water quality monitoring at Red Falls. The additional funding **will** also enable DEP to fully implement the Stream Management Program evaluation strategy.

Second, DEP is pursuing the mapping and analysis of impervious surfaces in the watershed. Through this effort, DEP will acquire mapping of the East of Hudson watershed and conduct an analysis of the percentage of impervious cover. The analysis, which will be completed by September 2001 (provided that flyover data can be obtained during leaf-off conditions) will be used to prioritize efforts to control nonpoint sources of pollution in certain east of Hudson basins.

Treatment Proposal

DEP believes that the accomplishments and commitments summarized above easily meet the standard set forth in the FAD for relief from all of the remaining requirements related to the Catskill/Delaware filtration facility. The FAD contemplates relief from four separate deliverables: Completion of a final Environmental Impact Statement (EIS) for a filtration plant (Deliverable 203d-

1); completion of the preliminary design (203e- 1); commencement of a final design (203f); and completion of a final design (203g). DEP is requesting only partial relief from these requirements. The City will proceed with and complete preliminary design of a filtration facility by September 30, 2001, in accordance with deliverable 203e- 1. The City is, however, seeking relief from the requirements to complete the EIS, and commence and complete final design. In place of those deliverables, DEP will commit to evaluate the ' feasibility of using ultraviolet disinfection to treat Catskill/Delaware water. If UV treatment is determined by DEP to be feasible, and EPA concurs on advancing UV treatment for the Catskill/Delaware supply, DEP will design and construct a UV facility. If UV is determined not to be feasible, and EPA determines that it is necessary to recommence design work on a filtration facility in order to ensure adequate protection of the Catskill/Delaware supply, DEP will recommence such work. The details of the proposed UV work, as well as a proposed schedule and deliverables, are described below.

Ultraviolet Disinfection

In anticipation of the promulgation of the Stage 2- Microbial and Disinfection ByProduct Rules by the EPA, DEP has begun to assess UV for the Catskill/Delaware water supply. Earlier this year, DEP and their consultants, the Joint Venture of Hazen and Sawyer/Camp Dresser & McKee (the Joint Venture), conducted a preliminary assessment of the engineering feasibility for UV disinfection of the supply. Based on this work, DEP authorized the Joint Venture to proceed with bench-scale studies to assess the effectiveness of Ultraviolet light in rendering *Cryptosporidium* cysts inactive. Samples of water from Kensico Reservoir have been delivered to Clancy Environmental for inactivation studies and to The University of North Carolina for disinfection by-product assessments. Each of these studies will be conducted using low and medium pressure UV lamps.

Additional work is being conducted to further address the engineering feasibility of installing UV facilities at Kensico Reservoir and to refine economic and operational considerations. Efforts are also underway to identify manufacturers of equipment suitable for such an installation.

DEP would like to invite EPA to participate in monthly meetings throughout the next twelve months to discuss the progress of the feasibility studies. During the fall of 2001, DEP will convene a technical review session to assess the feasibility studies. On or before December 31, 2001, DEP will summarize the findings of these investigations in a UV Feasibility Report. Provided that DEP determines that UV remains a feasible option for meeting the goals of the Enhanced Surface Water Treatment Rule, DEP will proceed with design of UV facilities and complete a conceptual design report and associated drawings by May 31, 2002.

If EPA and DEP agree by May 31, 2002 to advance UV disinfection for the Catskill/Delaware supply, DEP will initiate final design work on or before August 31, 2002. Final design will be completed by May 31, 2005, and a UV facility will be in operation by August 31, 2009. A draft EIS for the facility would be prepared by May 31, 2004, and a final EIS would be completed by November 30, 2004. Note that a full EIS may not be necessary for this project; if not, DEP will complete appropriate environmental reviews under SEQRA, as necessary, by November 30, 2004.

Because facts and circumstances change, including the requirements of the Surface Water Treatment Rule and other applicable federal laws, DEP is requesting that it be given an opportunity to review with EPA the necessity of proceeding with a UV treatment facility prior to January 31, 2004, and to demonstrate to EPA i) that the City has substantially complied with the terms of the then@-current FAD, and ii) that the City is in compliance with, or has proposed measures acceptable to EPA for complying with, the Enhanced Surface Water Treatment Rule.

Filtration

As noted above, in consideration of the considerable achievements of the watershed protection program and the City's commitment to pursue UV, DEP is requesting relief from three deliverables related to the full-scale filtration facility. However, because DEP has not at this time determined for certain that UV is feasible, we recognize that it may be necessary in the future to recommence filtration planning. Should DEP determine that UV treatment is not feasible, and should EPA thereupon determine that- it is necessary to recommence design work on a filtration facility in order to ensure adequate protection of the Catskill/Delaware water supply, DEP will recommence and prosecute such work in accordance milestones that afford DEP the same design time intervals as in the FAD (i.e., 12 months from the order to recommence work, DEP would begin final design. Final design would take four years.) In order to ensure that any necessary environmental analyses incorporate near-final design elements, and are conducted and completed in support of local permitting requirements and time frames, DEP would complete a DEIS one year prior to completion of final design and complete a FEIS six months thereafter.

Conclusion

I believe that taken as a whole, the proposal that DEP is putting forth is in the best interests of long-term water quality for the Catskill and Delaware supplies. The current quality of the water is, without question, excellent. The comprehensive watershed protection program that DEP and its partner agencies and organizations have put in place has achieved significant results. In furtherance of those achievements, DEP has made commitments beyond those required in the FAD to advance certain key programs. Finally, the possibility that UV will provide a higher level of disinfection and an additional barrier against pathogens can give EPA and the consumers of New York City's water an extra, level of confidence in the long-term quality of the water supply' In consideration of these significant achievements and commitments, DEP is seeking partial relief as contemplated by the FAD.

Thank you for your consideration of this important matter. My staff and I stand ready to answer any questions you may have and to move forward with this proposal.

Sr., P.E.

c: R. Tramontano, NYSDOH
S. Allen, NYSDEC
D. Chapin
M. Principe
D. Warne
J. Ketas